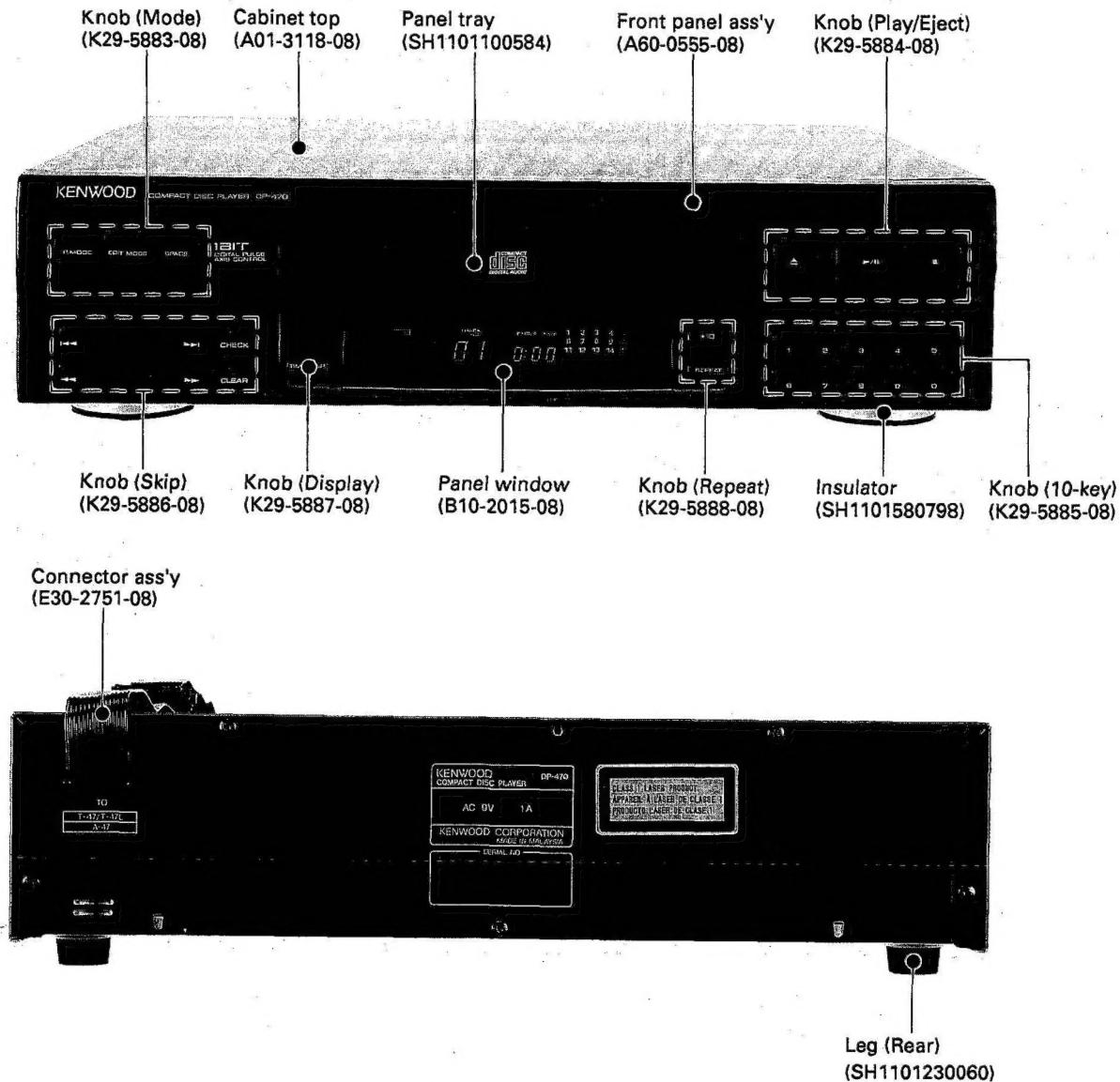


COMPACT DISC PLAYER
DP-470
SERVICE MANUAL
(System K-66, MIDI M-47)

KENWOOD

© 1993-10 PRINTED IN JAPAN
B51-4794-00(O)2568



In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040.10, Chapter T, Subchapter J.

**DANGER : Laser radiation when open and interlock defeated.
AVOID DIRECT EXPOSURE TO BEAM.**

DP-470

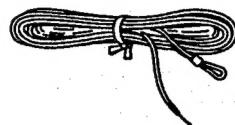
CONTENTS/ACCESSORIES

CONTENTS

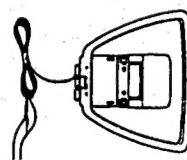
ACCESSORIES	2
CONTROL	3
REMOTE CONTROL	4
DISASSEMBLY FOR REPAIR	5
BLOCK DIAGRAM	7
CIRCUIT DESCRIPTION	
1. Test Mode	8
2. Microprocessor : μ PD75216ACW-A65 (IC4)	10
MECHANISM OPERATION DESCRIPTION	12
ADJUSTMENT	14
PC BOARD (COMPONENT SIDE VIEW)	17
SCHEMATIC DIAGRAM	19
EXPLODED VIEW (MECHANISM)	23
(UNIT)	24
PARTS LIST	25
SPECIFICATIONS	BACK COVER

ACCESSORIES

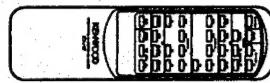
• FM indoor antenna 1
(SH1105020014)



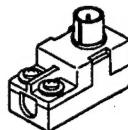
• Loop antenna 1
(SH1105020020)



• Remote control unit 1
(W03-4603-08)



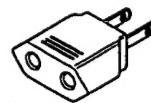
• Antenna adaptor (75Ω/300Ω) 1
(SH1105240051)



• Batteries (R6/AA) 2
(-)



• AC plug adaptor (M type only) 1
(SH1305240053)



(Except for some areas)
For the unit with a European AC plug in
areas other than Europe.

All accessories are packed with X-47.

M, X type

System name	Tuner	Amp	Cassette deck	CD player	Speaker
K-66	T-47	A-47	X-47	DP-470	LS-47

T, E type

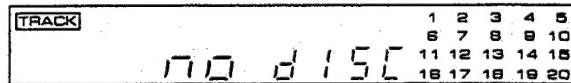
System name	Tuner	Amp	Cassette deck	CD player	Speaker
MIDI M-47	T-47L	A-47	X-47	DP-470	LS-47

Option	Graphic equalizer
	GE-470

Note related to transportation and movement

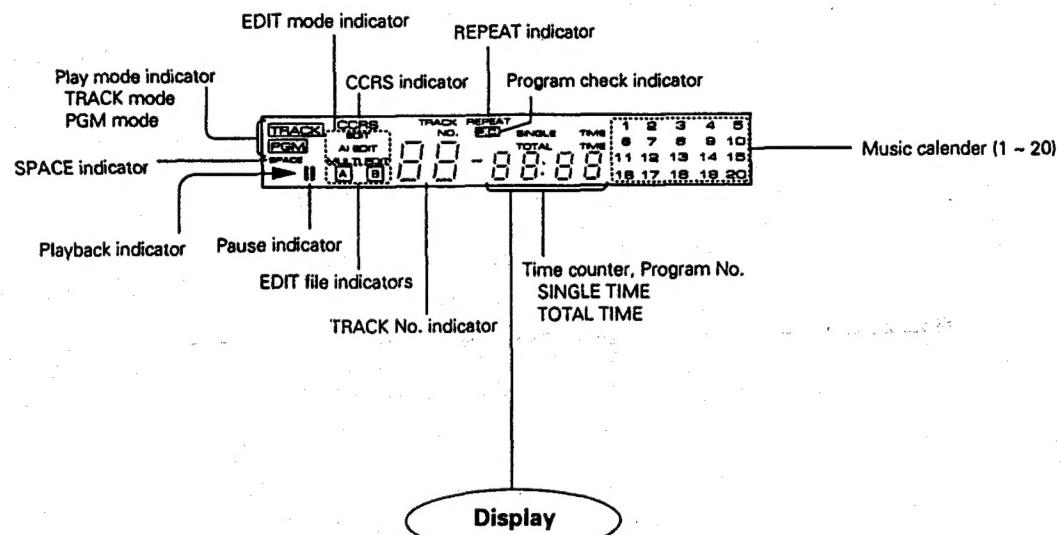
Before transporting or moving the CD PLAYER, carry out the following operations.

1. Turn the power ON but do not load a disc.
2. Wait a few seconds and verify that the display shown appears.
3. Turn the power OFF.

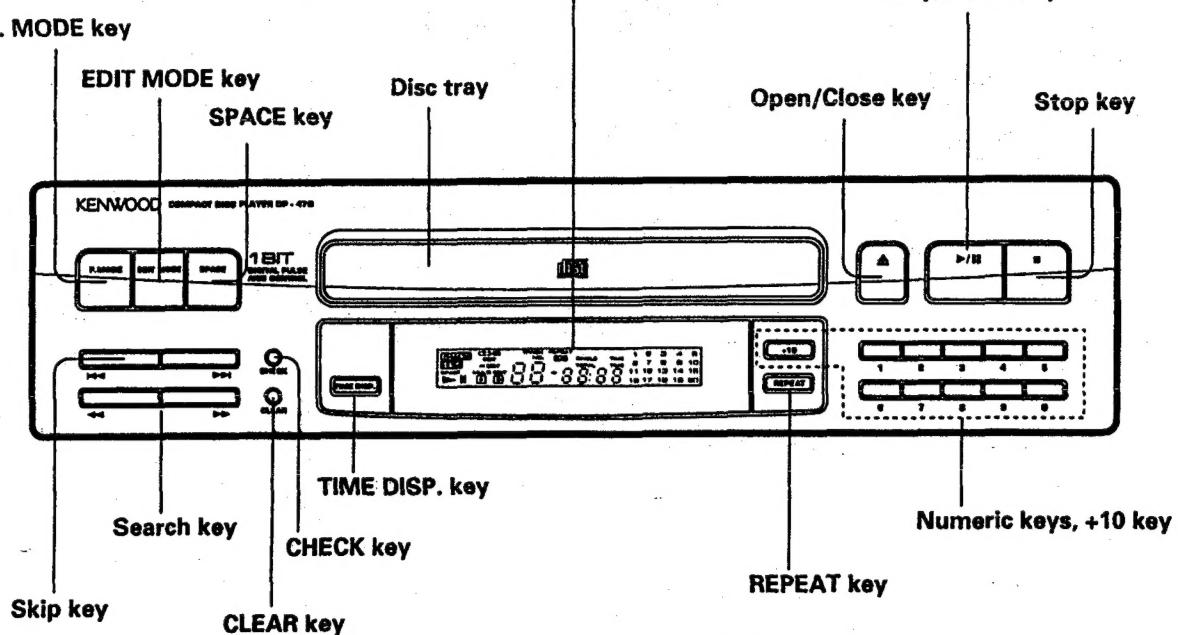


DP-470

CONTROL

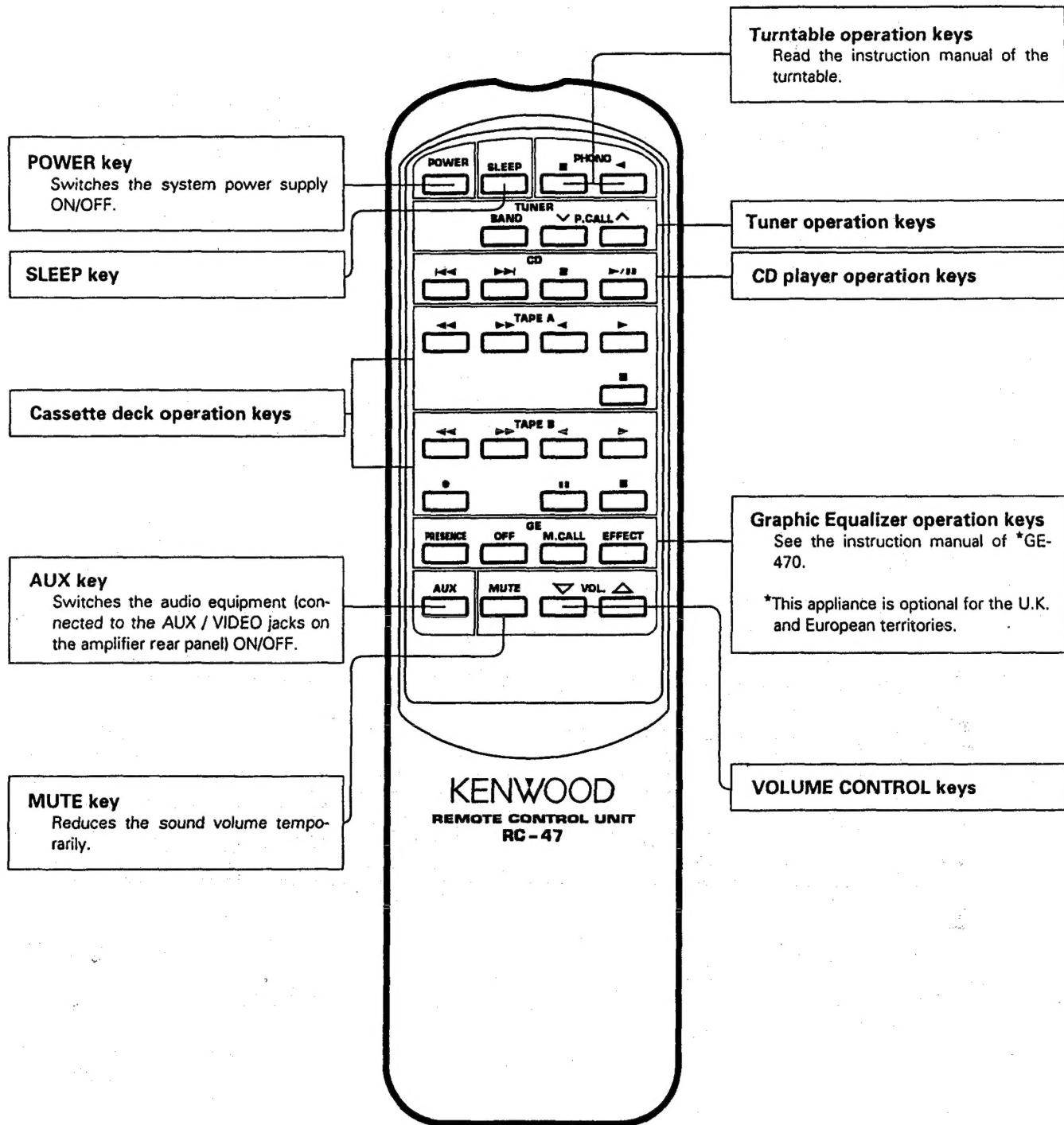


P. MODE key



DP-470

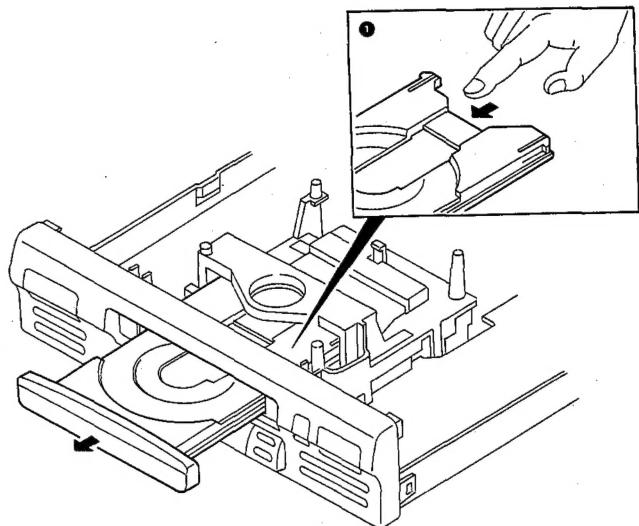
REMOTE CONTROL



DISASSEMBLY FOR REPAIR

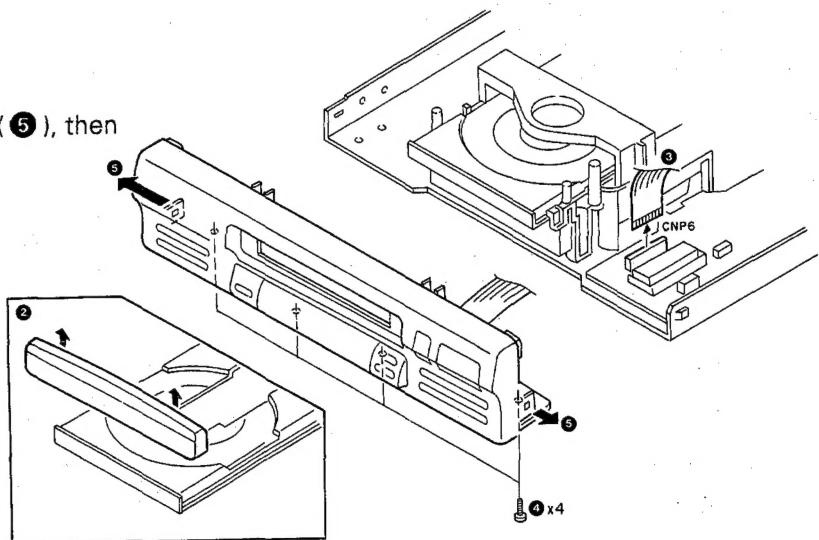
1. When not coming out the tray under normal operation

1. Press the tray slowly by hand (1).



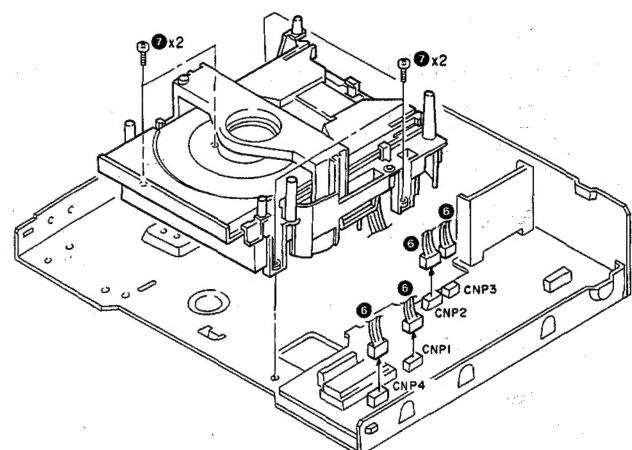
2. Removing the front panel

1. Remove the tray panel (2).
2. Disconnect the flexible cord (3).
3. Remove the 4 screws (4).
4. Remove the panel-catches from chassis (5), then remove the front panel.



3. Removing the mechanism ass'y and that tray

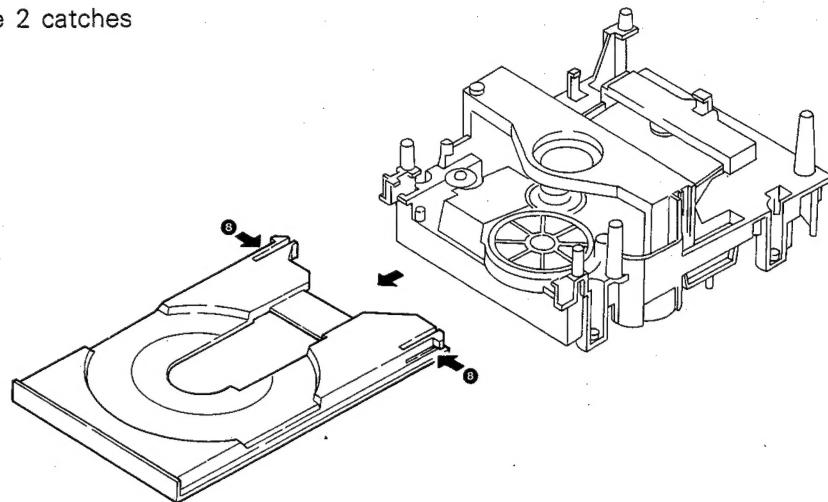
1. Disconnect the 4 connectors (6).
2. Remove the 4 screws (7), then remove the mechanism ass'y.



DP-470

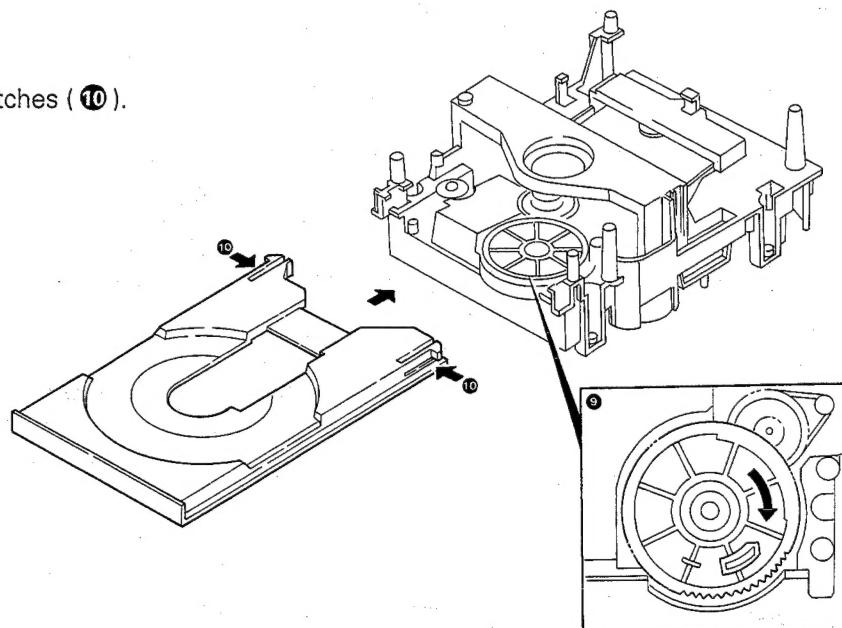
DISASSEMBLY FOR REPAIR

3. Slide the tray front-wards, remove the 2 catches (8), then remove the tray.



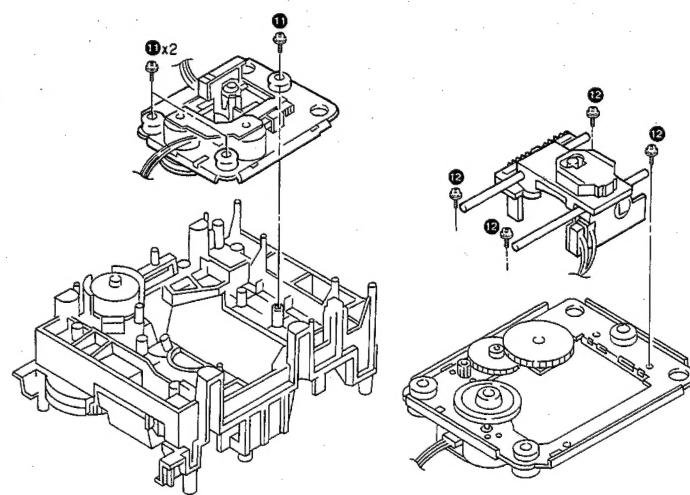
4. How to mount the tray

1. Turn the gear fully clockwise (9).
2. Insert the tray while pressing the 2 catches (10).

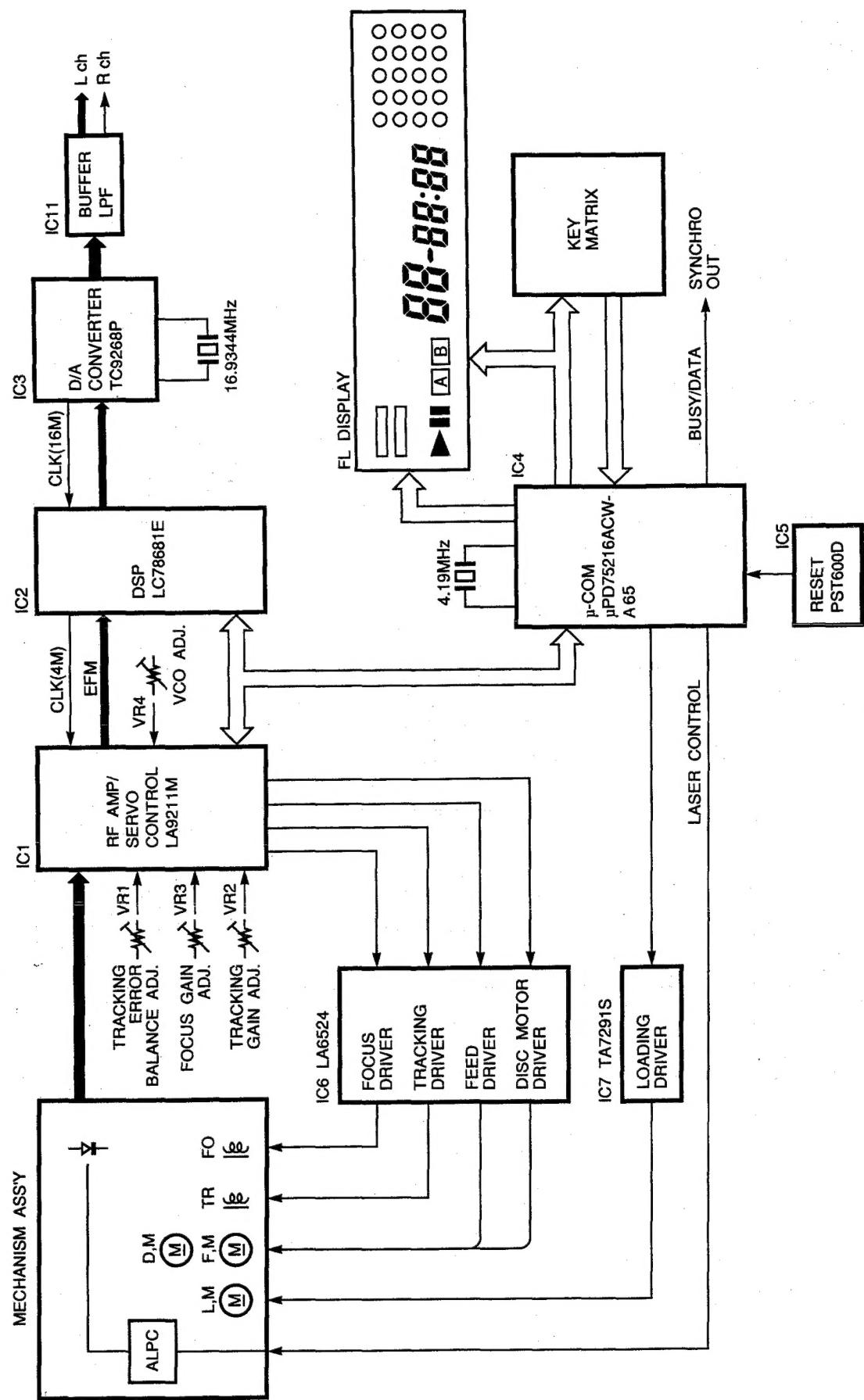


5. Removing the pickup

1. Remove the 3 screws (11), then remove the pickup mechanism ass'y.
2. Remove the 4 screws (12), then remove the pickup.



BLOCK DIAGRAM

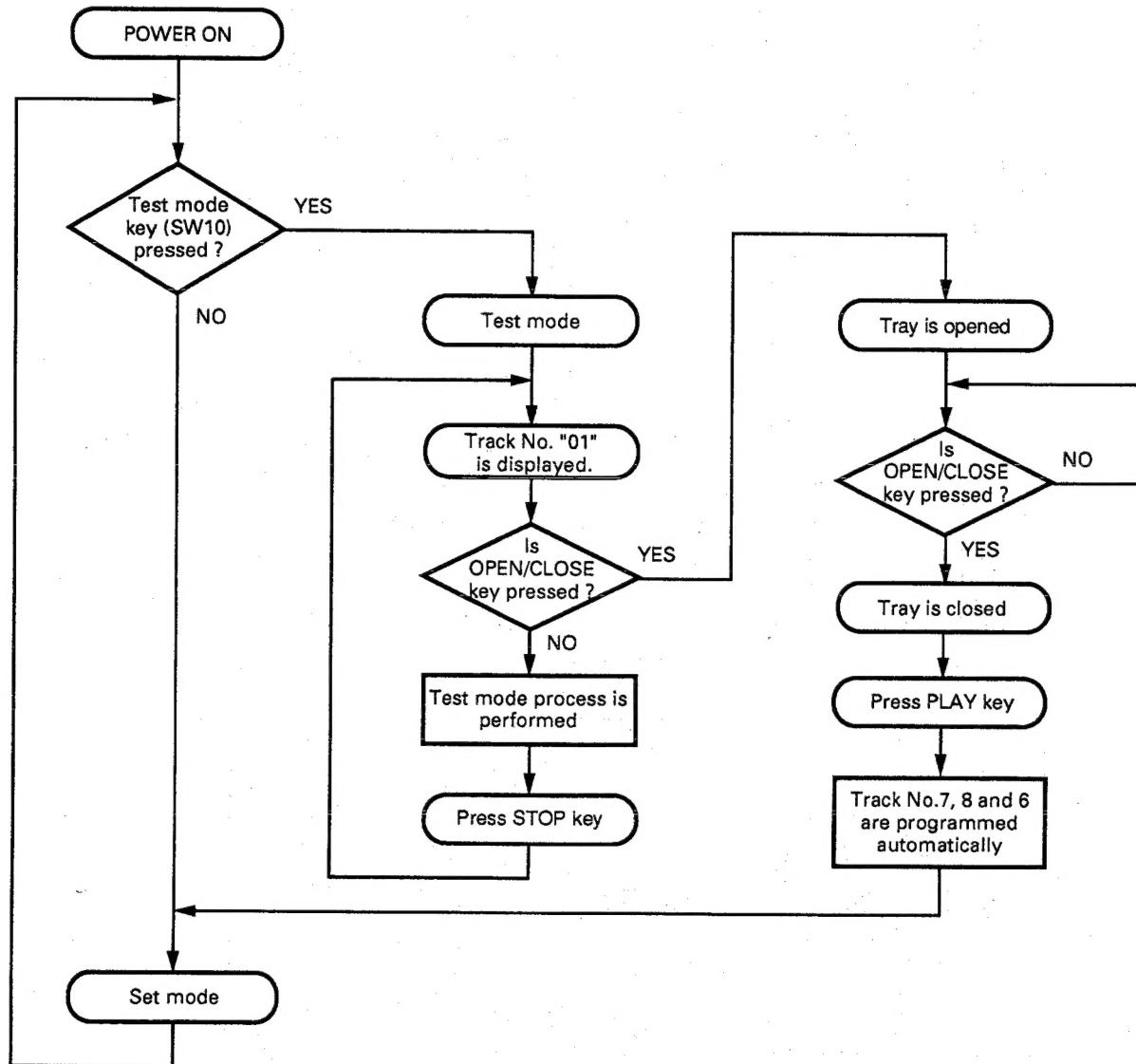


CIRCUIT DESCRIPTION

1. Test mode

1-1. Setting the test mode

This microprocessor built in this unit can be put to TEST MODE (SW10).



CIRCUIT DESCRIPTION

1-2. Key and functions valid in test mode

No.	Input key	Function	Track No. display																																				
1	PLAY	(1) Focusing servo ON (2) Tracking servo ON (3) Feed servo ON	TRACK NO. 05 ↓ Displayed for a few seconds after completion (1), (2) and (3). ↓ Disc Track No. is displayed.																																				
2	CHECK or Number "0" key	(1) Focusing servo ON (2) Tracking servo OFF (3) Feed servo OFF	TRACK NO. 03																																				
3	STOP	(1) Focusing servo OFF (2) Tracking servo OFF (3) Feed servo OFF	TRACK NO. 01																																				
4	►►	In the STOP mode, moves the pickup slightly toward the outer position of disc. When feed servo is ON, sets the track gain to "H".	-																																				
5	◀◀	In the STOP mode, moves the pickup slightly toward the inner position of disc. When feed servo is ON, sets the track gain to "L".	-																																				
6	UP ►►	Turns all FL display lamps ON.	TRACK NO. 88																																				
7	DOWN ◀◀	Turns all FL display lamps OFF. "TRACK NO." is lighted.	TRACK NO. 88																																				
8	+10	Playback Track No.1 under High-speed mode (If not open tray, SPACE key function is available.)	-																																				
9	SPACE	Set playback mode to High-speed or Normal.	-																																				
10	P. MODE	Track No. 7,8, and 6 (High-speed) are programmed and playback from Track No.7. The test mode is canceled.	-																																				
11	OPEN/CLOSE	When the tray is opened then closed. Track No. 7, 8, and 6 are programmed and set is in STOP mode. The test mode is canceled.	TRACK NO. 00																																				
12	Numeric key (1 ~ 9)	Jumps tracks as shown below. <table border="1"> <tr> <td>Key</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Number of tracks</td> <td>1</td> <td>4</td> <td>128</td> <td>512</td> <td>1000</td> </tr> <tr> <td>Direction</td> <td colspan="5">Outer</td> </tr> <tr> <td>Key</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td></td> </tr> <tr> <td>Number of tracks</td> <td>1</td> <td>4</td> <td>128</td> <td>512</td> <td></td> </tr> <tr> <td>Direction</td> <td colspan="5">Inner</td> </tr> </table>	Key	1	2	3	4	5	Number of tracks	1	4	128	512	1000	Direction	Outer					Key	6	7	8	9		Number of tracks	1	4	128	512		Direction	Inner					-
Key	1	2	3	4	5																																		
Number of tracks	1	4	128	512	1000																																		
Direction	Outer																																						
Key	6	7	8	9																																			
Number of tracks	1	4	128	512																																			
Direction	Inner																																						
13	REPEAT	(1) Tray Opened (2) Laser ON The REPEAT function is canceled when the tray is closed by pressing the tray. "REPEAT" figures is lighted.	TRACK NO. 02																																				

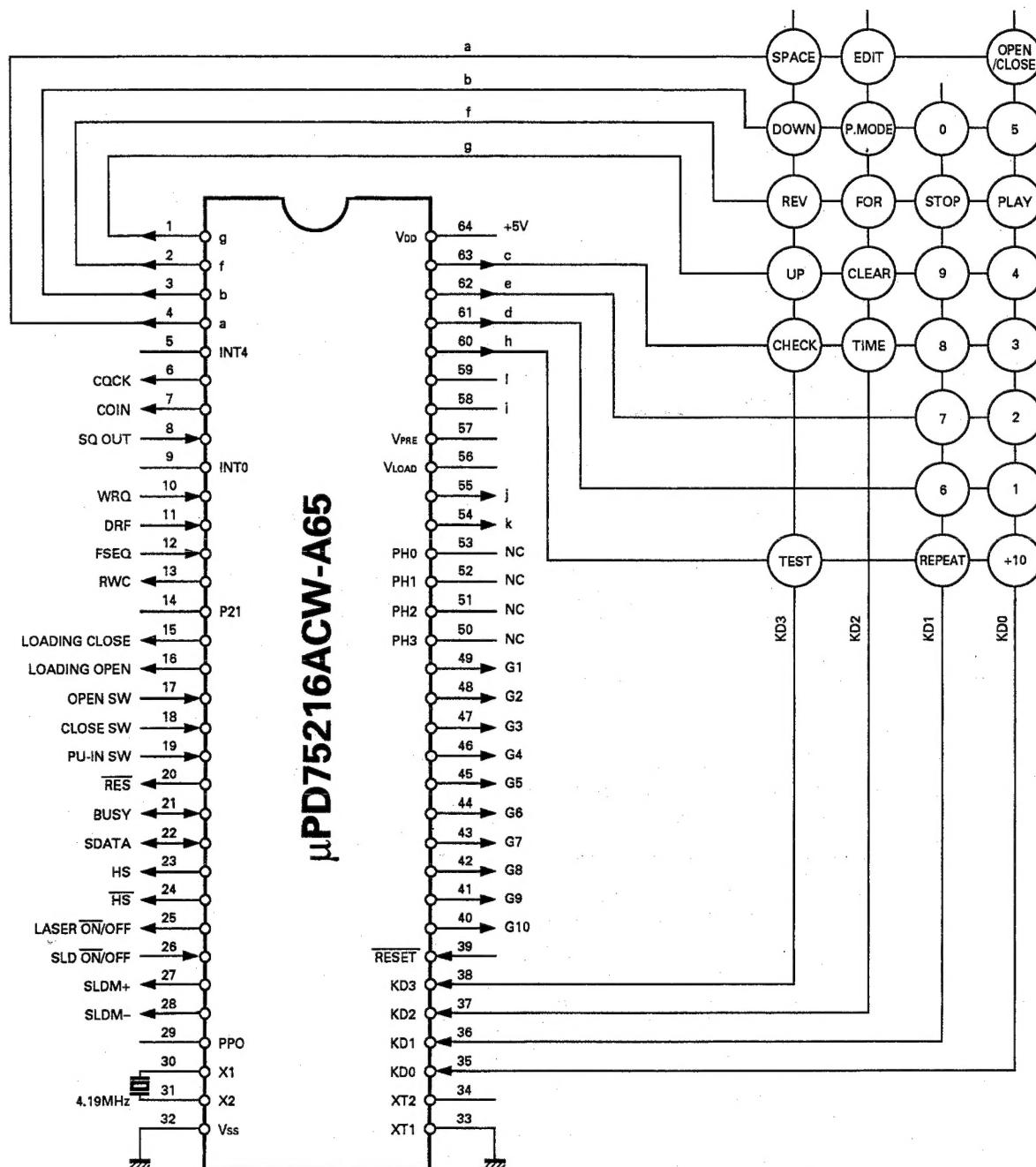
REPEAT mode : Press "REPEAT" key → Press "OPEN/CLOSE" key → Press "REPEAT" key...

DP-470

CIRCUIT DESCRIPTION

2. Microprocessor : μ PD75216ACW-A65 (IC4)

2-1. Terminal connection diagram

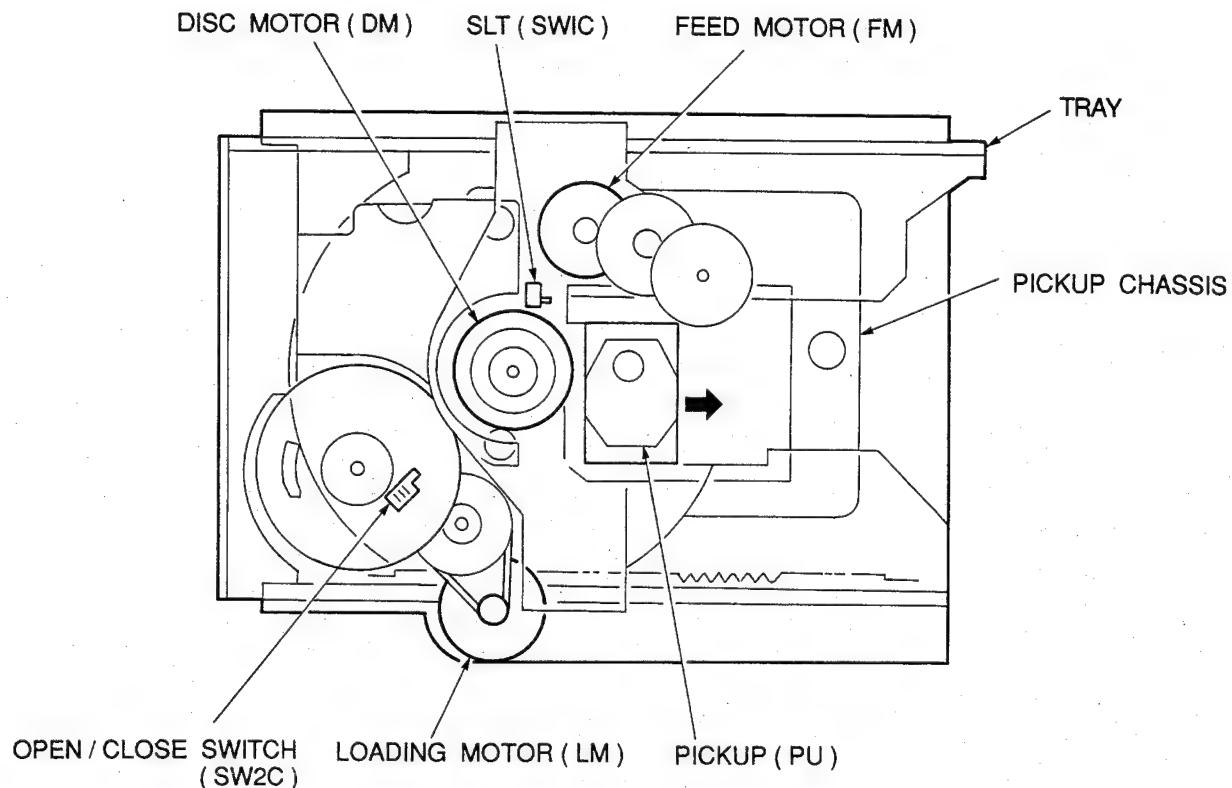


CIRCUIT DESCRIPTION

2-2. Pin function

No.	Pin name	I/O	Function
1~4	g, f, b, a	O	Fluorescent indicator segment.
5	INT4	-	GND
6	CQCK	O	DSP IC CQCK terminal.
7	COIN	O	DSP IC COIN terminal.
8	SQ OUT	I	DSP IC SQ OUT terminal.
9	INT0	-	GND
10	WRQ	I	DSP IC WRQ terminal.
11	DRF	I	LA9211M DRF terminal.
12	FSEQ	I	DSP IC FSEQ terminal.
13	PWC	O	DSP IC RWC terminal.
14	P21	-	GND
15	LOADING CLOSE	O	Tray close signal output.
16	LOADING OPEN	O	Tray open signal output.
17	OPEN SW	I	Tray open detection signal input.
18	CLOSE SW	I	Tray close detection signal input.
19	PU-IN SW	I	Pick up limit signal input.
20	RES	O	DSP IC reset signal output.
21	BUSY	I/O	System control signal (BUSY).
22	SDATA	I/O	System control signal (DATA).
23	HS	O	High speed control.
24	HS	O	High speed control.
25	LASER ON/OFF	O	Laser ON/OFF control signal output.
26	SLD ON/OFF	I	Feed motor ON/OFF signal input.
27	SLD +	O	Feed motor control signal output.
28	SLD -	O	Feed motor control signal output.
29	PPO	-	No connected.
30	X1	I	Oscillator signal input.
31	X2	O	Oscillator signal output.
32	Vss	-	GND
33	XT1	-	GND
34	XT2	-	No connected.
35~38	KD0~KD3	I	Key input signal.
39	RESET	I	Reset signal input.
40~49	G10~G1	O	Fluorescent indicator tube grid signal output.
50~53		-	GND
54, 55	k, j	O	Fluorescent indicator segment.
56	VLOAD	-	FL pull down resistor power supply (-30V).
57	VPRE	-	FL driver circuit power supply (-6V).
58~63	i, l, h, d, e, c	O	Fluorescent indicator segment.
64	VDD	-	Power supply (+5V).

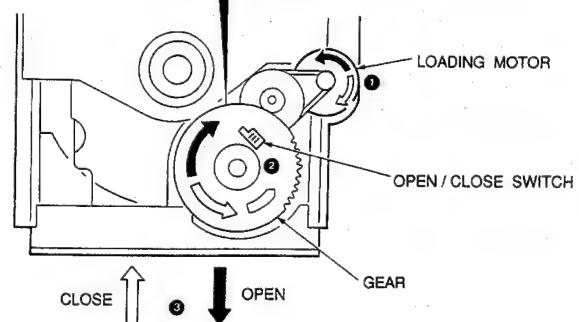
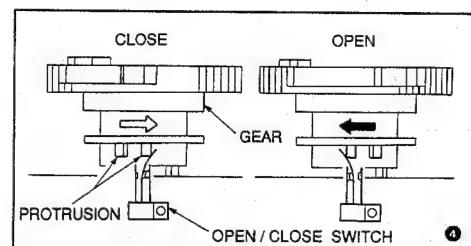
MECHANISM OPERATION DESCRIPTION



1. Tray OPEN/CLOSE operation

By the rotation of the motor (1), the gear (2) is rotated and the tray starts OPEN/CLOSE operation (3). The OPEN/CLOSE operation stops when the protrusion of the gear comes in contact with the detection switch (4).

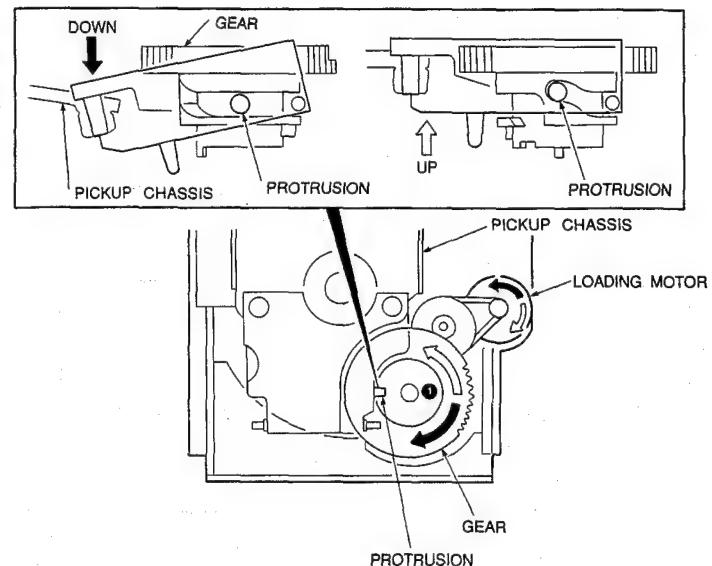
The OPEN/CLOSE operation stops when the protrusion of the gear comes in contact with the detection switch (4).



MECHANISM OPERATION DESCRIPTION

2. Pickup chassis UP/DOWN operation

Accompanied with the OPEN/CLOSE operation, the pickup chassis moves up and down along with the grooves in the gear (①).



ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG.
1	VCO	Test disc Type 4	Connect the frequency counter to "VCO" and GND.	Short-circuit pins TEST and turn the power on to enter the test mode. Press the STOP key. Then, confirm that the display is "01"	VR4	4.24MHz±15kHz	(a)
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect the oscillo- scope to "T.ER".	Press the OPEN/CLOSE key to open the tray. Reset to TEST mode Then, press the CHECK key. Confirm that the display is "03".	VR1	Symmetry between upper and lower patterns. or DC=0±0.05V	(b)
3	FOCUS GAIN	Test disc Type 4 Apply signal of 1kHz, 0.5Vrms to R61(F.P.- F.E.).	Connect a LPP to R61 (F.P.- F.E.) , to which connect two AC volt- meters.	Press the PLAY key Confirm that the display is "05".	VR3	Two VTVMs should read the same value.	(c)
4	TRACKING GAIN	Test disc Type 4 Apply signal of 1kHz, 0.5Vrms to R63(T.P.- T.E.).	Connect a LPP to R63 (T.P.- T.E.) , to which connect two AC volt- meters.	Press the PLAY key Confirm that the display is "05".	VR2	Two VTVMs should read the same value.	(d)
5	H.F. LEVEL CONFIRMATION	Test disc Type 4	Connect the oscillo- scope to "H.F.".	Press the PLAY key Confirm that the display is "05".	-	1.5Vp-p ~ 2.5Vp-p	(e)

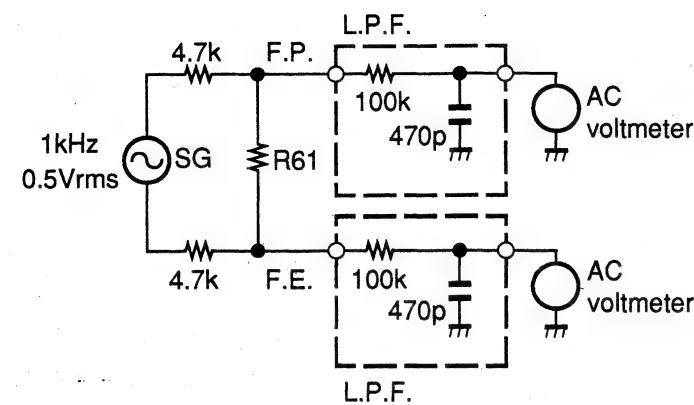
(NOTE) Type 4 disc : SONY YEDS-18 TEST DISC or equivalent.

Adjustment procedures are in TEST MODE.

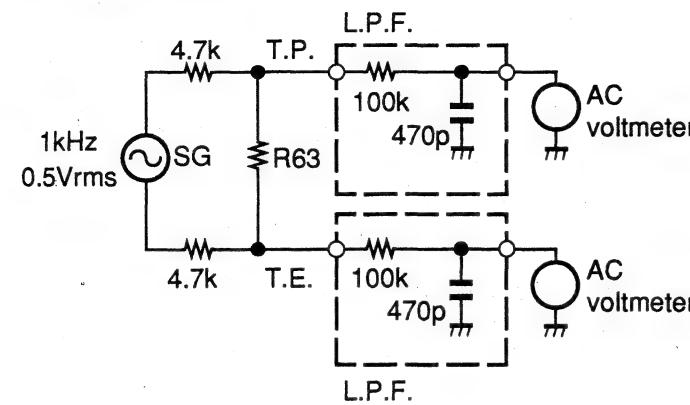
DP-470 DP-470

ADJUSTMENT

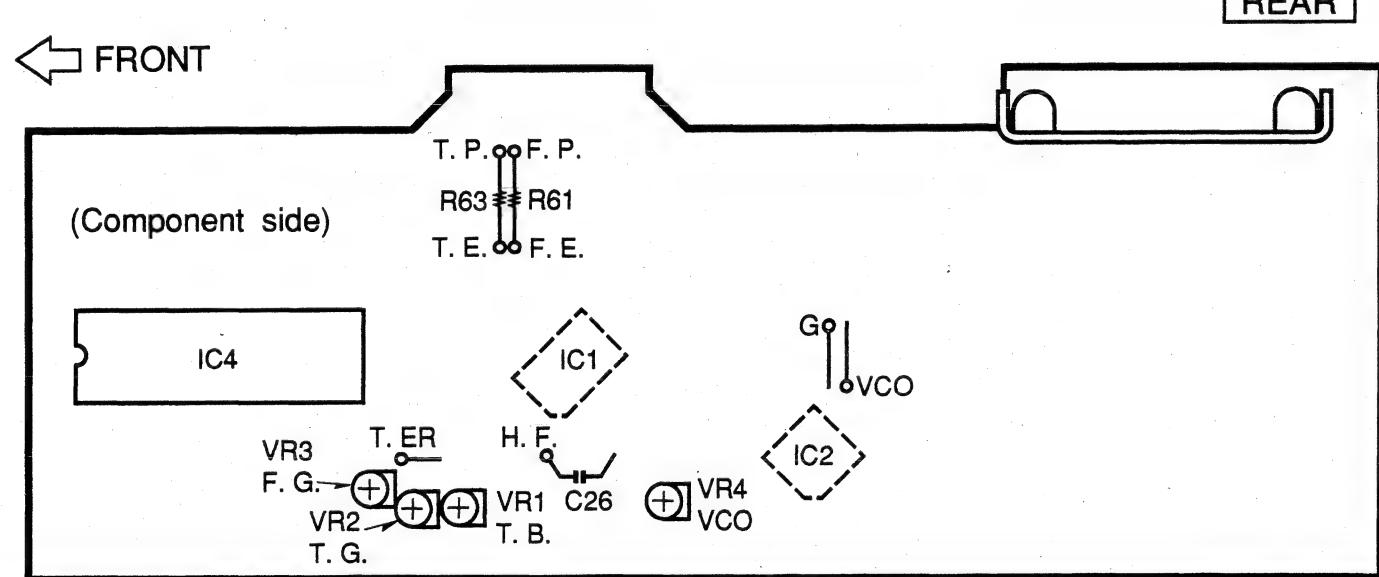
(c) Focus gain



(d) Tracking gain

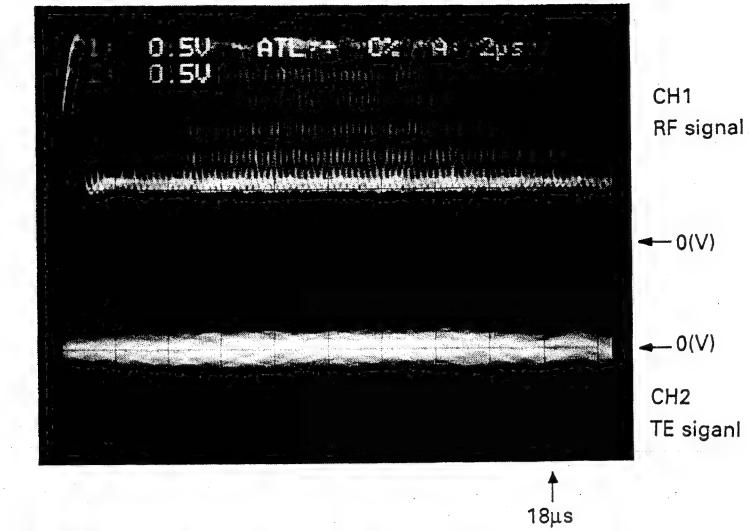


FRONT



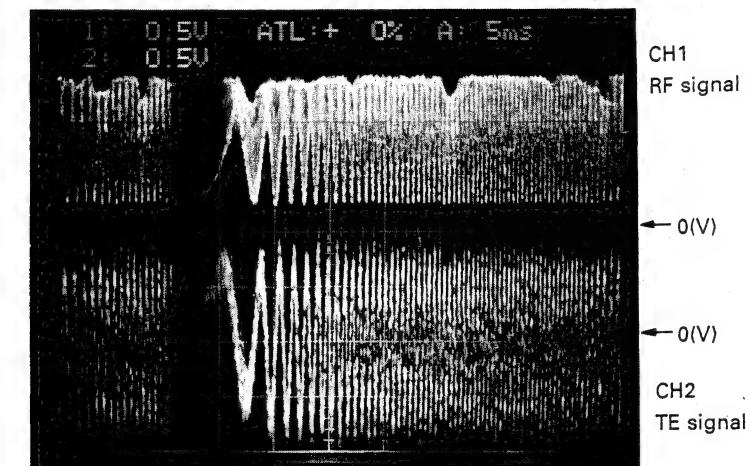
ADJUSTMENT

RF level, TE waveform



- RF signal and E.Spot signal in test mode (PLAY).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of approx. 18μs after RF signal, in the form of a projection.

(b) Tracking error balance



- RF signal and T.Error signal; in test mode (Focusing ON). (Disc type 4)
- Adjust T.Error so that the waveform is symmetrical above and below 0V. (VR 1)

A

B

C

D

E

F

G

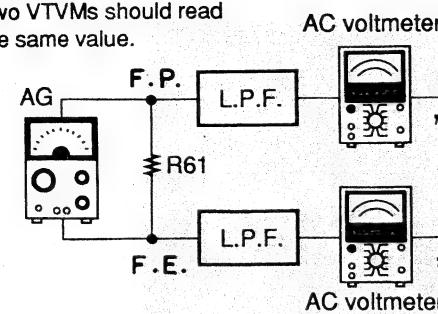
H

I

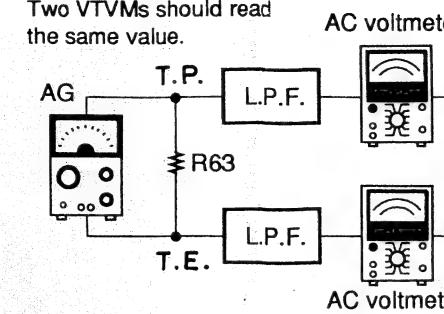
J

PC BOARD (COMPONENT SIDE VIEW)

(c) Focus gain :
Two VTVMs should read the same value.

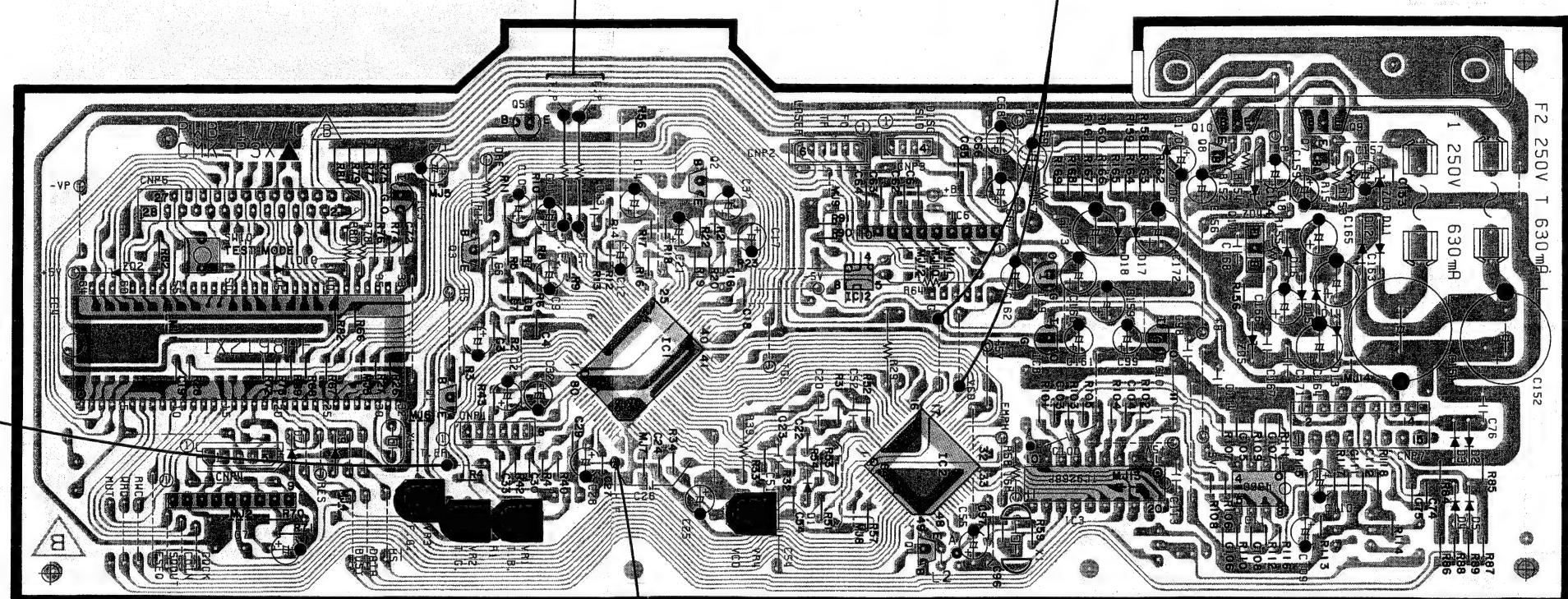


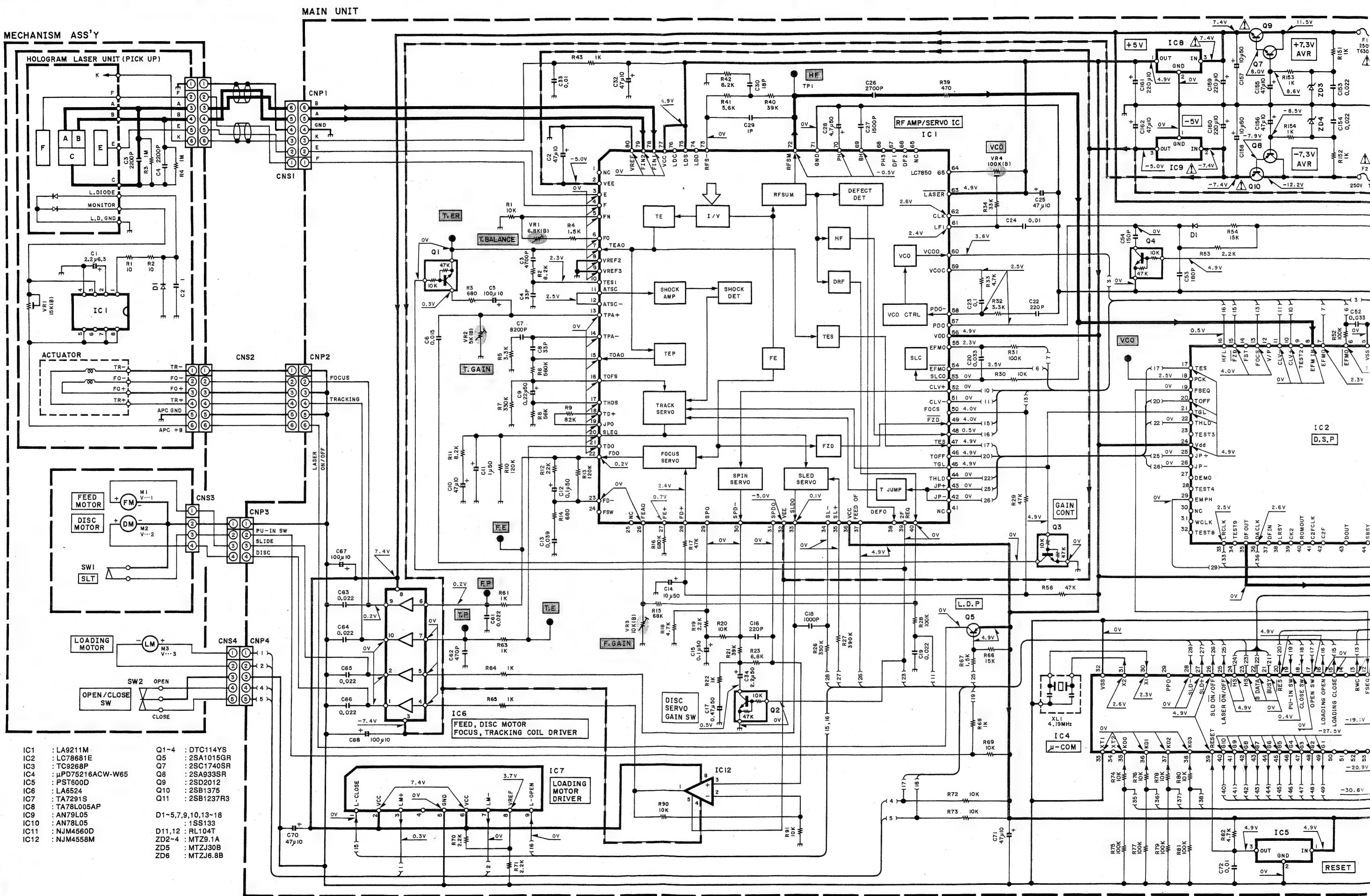
(d) Tracking gain :
Two VTVMs should read the same value.

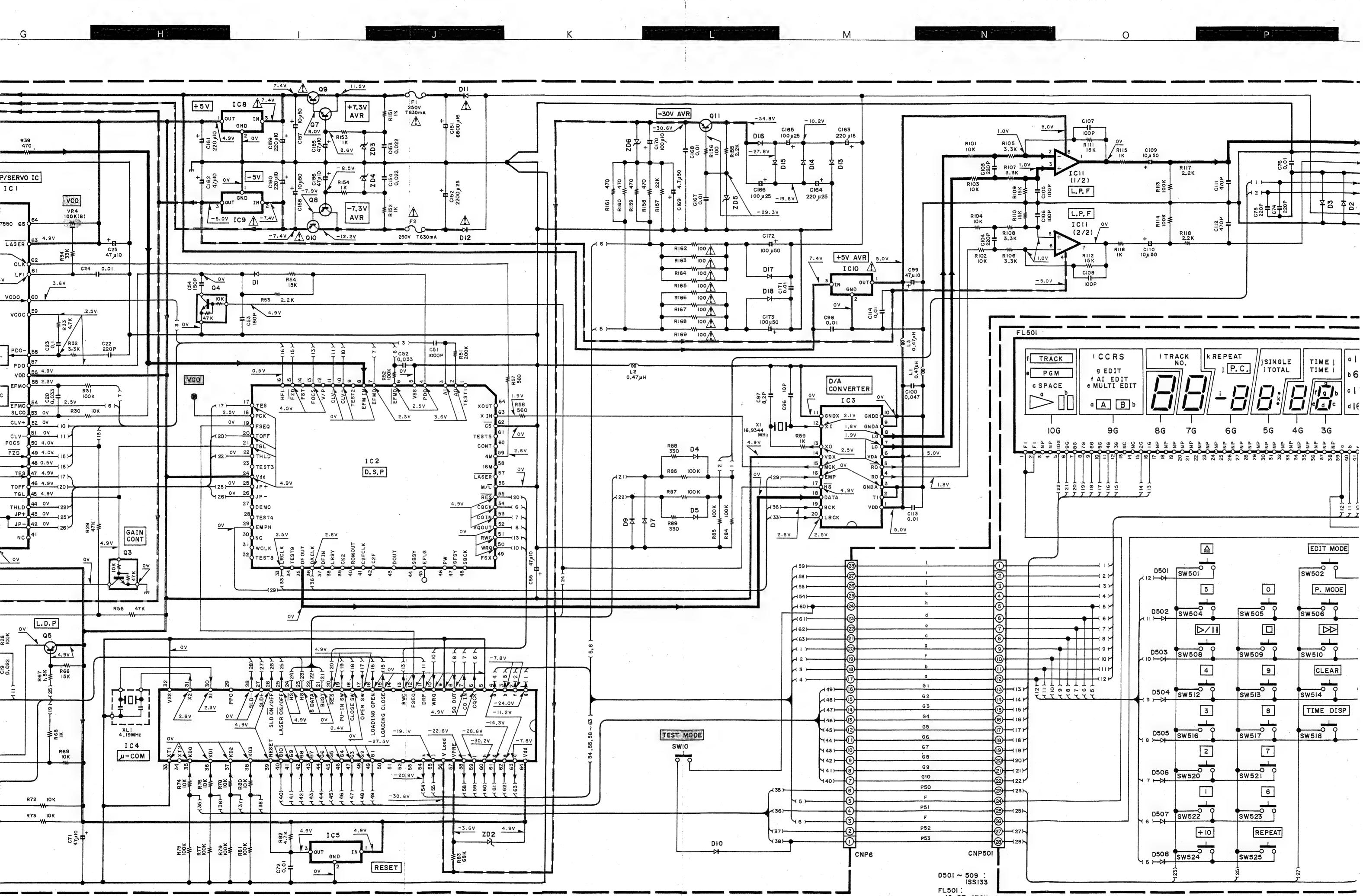


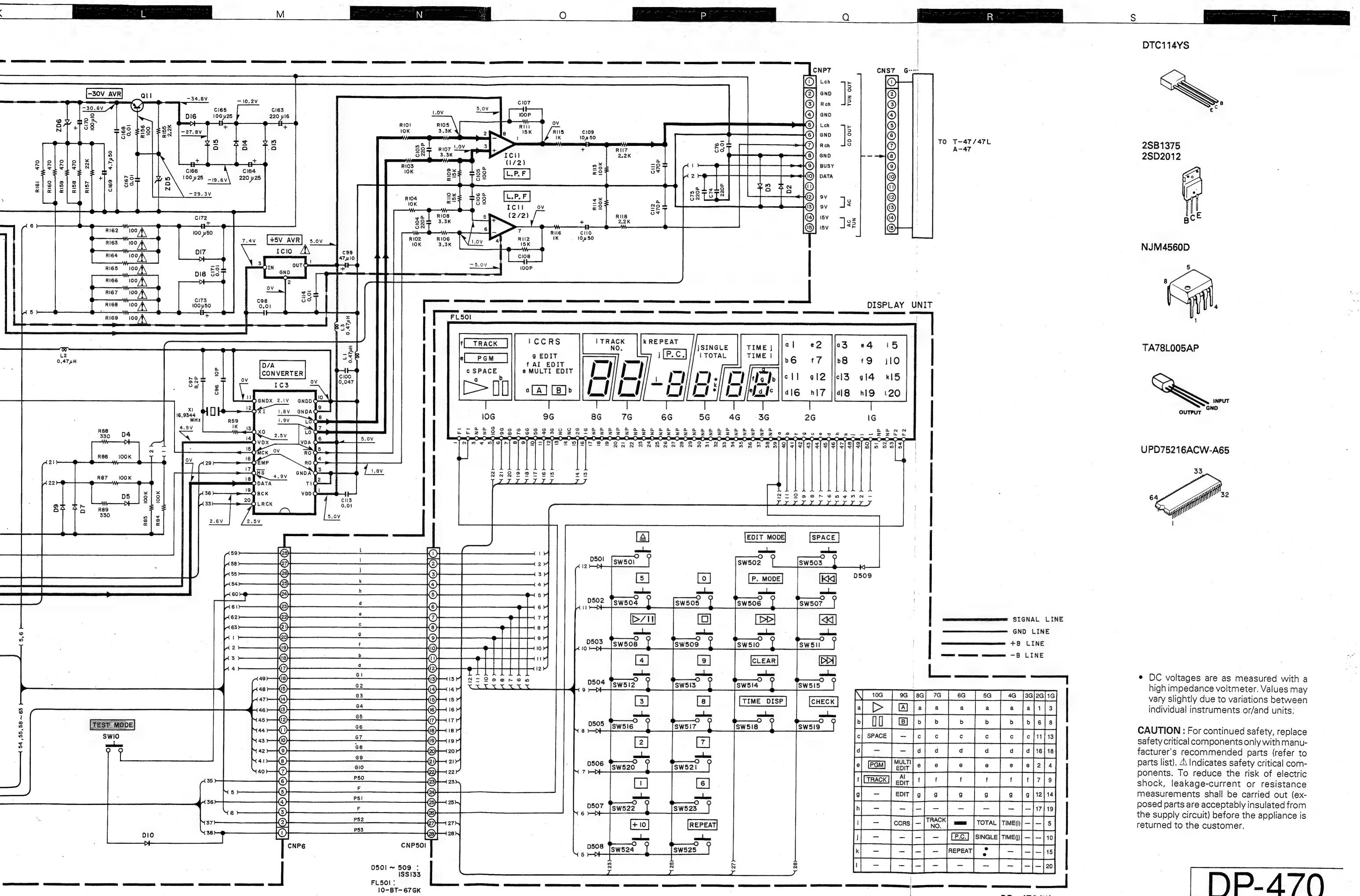
Frequency counter

(a) VCO : $4.24\text{MHz} \pm 15\text{kHz}$

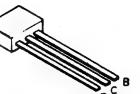




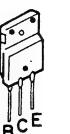




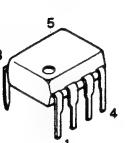
DTC114YS



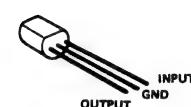
2SB1375
2SD2012



NJM4560D



TA78L005AP



UPD75216ACW-A65



• DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). **▲** Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

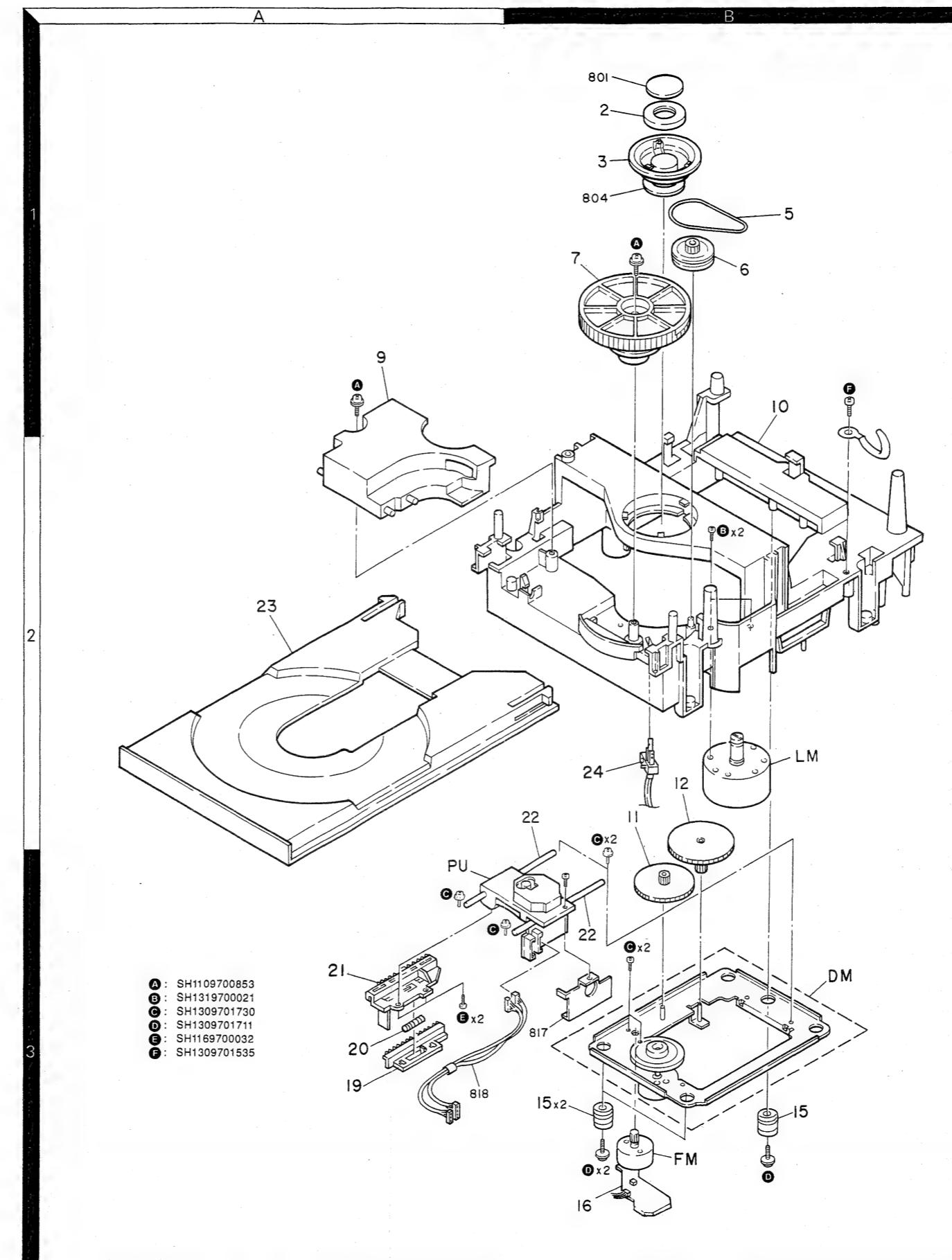
DP-470
KENWOOD

Y22-3492-70

DP-470

DP-470

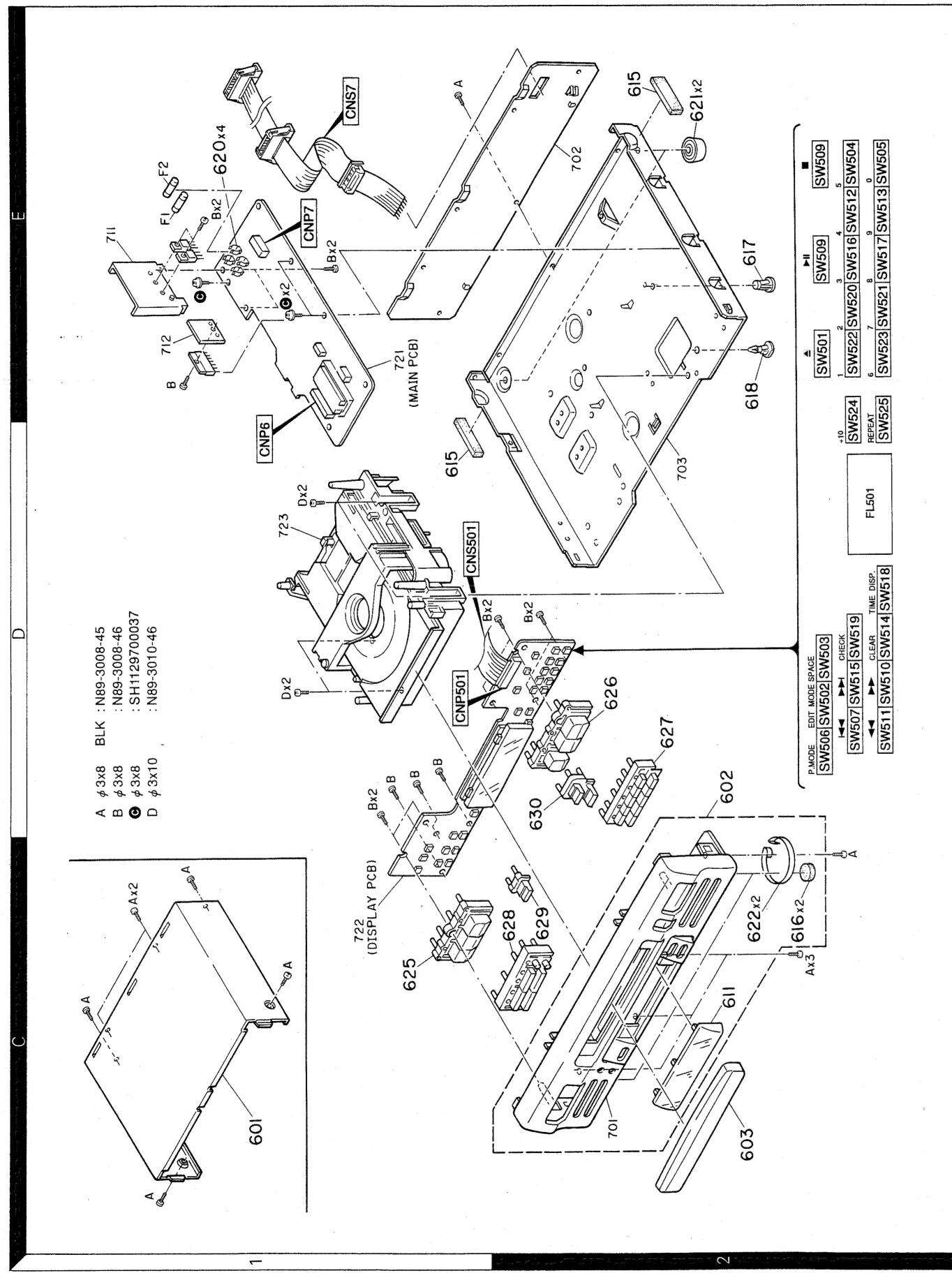
EXPLODED VIEW (MECHANISM)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (UNIT)

PARTS LIST



Parts with the exploded numbers larger than 700 are not supplied

* New Parts
Parts without Parts No. are not supplied.

- ✖ New Parts
- ✖ Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Alle ohne Parts No. werden nicht geliefert.

1

6

.ne

Part

25

Ref. No.	参照番号	Address	New Parts	部品番号	Description	部品名 / 規格	Desti-nation	Re-marks
		位 置	新				仕	向備考
DP-470								
601		1C	*	A01-3118-08	CABINET TOP			
602		2D	*	A60-0555-08	FRONT PANEL ASSY			
603		2C	*	SH1101100584	PANEL TRAY			
611		2C	*	B10-2015-08	PANEL WINDOW			
-				B40-0016-33	WARRANTY CARD	X		
				B46-0310-03	WARRANTY CARD	TE		
615		1D, 2E	*	G10-0139-08	CUSHION CHASSIS	TEX		
616		2C	*	SH1103260268	CUSHION	MI		
-			*	H10-5710-08	POLYSTYRENE FOAMED FIXTURE(L)			
-			*	H10-5711-08	POLYSTYRENE FOAMED FIXTURE(R)			
-			*	H50-0827-08	ITEM CARTON CASE			
-			*	H50-0828-08	ITEM CARTON CASE			
-			*	SH110924063	PAD			
-			*	SH110906121	PROTECTION BAG(UNIT)			
617		2E	*	SH1104130267	SPACER PWB			
618		2B	*	SH1102440449	BRACKET PWB			
620		1E	*	SH1105160005	FUSE HOLDER			
621		2E	*	SH1101230060	LEG (REAR)			
622		2C	*	SH1101580798	INSULATOR			
625		1C	*	K29-5833-08	KNOB (MODE)			
626		2D	*	K29-5834-08	KNOB (PLAY/BJECT)			
627		2D	*	K29-5835-08	KNOB (10-kev)			
628		2C	*	K29-5836-08	KNOB (SKIP)			
629		2C	*	K29-5837-08	KNOB (DISPLAY)			
630		2D	*	K29-5898-08	KNOB (REPEAT)			
A				N89-3008-45	SCREW	3X8		
B				N89-3008-46	SCREW	3X8		
C				SH112900037	SCREW	3X8		
D				N89-3010-46	SCREW	3X10		
MAIN UNIT								
C2			*	CE04KW1A470M	ELECTRO	47UF	10WV	
C3			*	SH1305300678	CYLND CHIP	C 4700PF	K	
C4			*	CE04DS1LH330J	CYLND CHIP	C 33PF	J	
C5			*	CE04KWA101M	ELECTRO	100UF	10WV	
C6			*	SH1305300683	CERAMIC	0.015UF	K	
C7			*	SH1105950092	CYLND CHIP	C 8200PF	K	
C8			*	CC41DS1LH330J	CYLND CHIP	C 33PF	J	
C9			*	CE04KWHR22M	ELECTRO	0.22UF	50WV	
C10			*	CE04KWA1470M	ELECTRO	47UF	10WV	
C11			*	CE04KWH010M	ELECTRO	1.0UF	50WV	
C12			*	CE04KWH01R1M	ELECTRO	0.1UF	50WV	
C13			*	SH1305300642	CERAMIC	0.039UF	K	
C14			*	CE04KWH100M	ELECTRO	1.0UF	50WV	
C15			*	CE04KWH01R1M	ELECTRO	0.1UF	50WV	
C16			*	CK7FB1H221K	CHIP C	220PF	K	
C17			*	CE04KW1H147M	ELECTRO	0.47UF	50WV	
C18			*	CK7FB1H1102K	CHIP C	1000PF	K	
C19			*	SH1105900673	CYLND CHIP	C 0.022UF	M	
C20			*	SH1305900664	CERAMIC	0.033UF	K	
C22			*	CK7FB1H221K	CHIP C	220PF	K	

L:Scandinavia
Y:PX(Far East, Hawaii)
P:Canada
T:England
E:Europe

KUSA P:Canada
T:England E:Europe

⚠ indicates safety critical components.

X:Australia **M:Other Areas**

▲ indicates safety critical components

Y:AAFES

PARTS LIST

4

* New Parts
Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

3

* New Parts
Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

5

* New Parts
Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

26

* New Parts
Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No.	参照番号	Address	New Parts 位 置 新	Parts No. 部 品 番 号	Description 部 品 名 規 格	Desti- nation 仕 向	Re- marks 備考
△ F1 , 2			*	F05-6313-05	FUSE(250V T6.30mA)	SH1302810231	
X1.1			*	L77-2132-08	CRYSTAL REZONATOR(16.9344MHz)	SH130290394	
			*	L78-0262-05	REZONATOR(4.19MHz)	SH1102140395	
VR1			*	R12-2048-08	TRIMMING POT. 6.8K<1.BALANCE>	S74-0027-08	
VR2			*	R12-1619-05	TRIMMING POT. 4.7K<1.GAIN>	SH1109700853	
VR3			*	R12-2685-05	TRIMMING POT. 10K<1.GAIN>	SH130970121	
VR4			*	R12-5651-05	TRIMMING POT. 100K<1.GAIN>	SH1309701730	
SH10				SH1305301218	TACT SWITCH(TEST MODE)	SH130970032	
SH501-525				SH1305301218	TACT SWITCH(EJECT etc.)	SH1309701535	
D1 -5				ISS133	DIODE	T42-0658-08	DISC MOTOR ASSY
D9 , 10				ISS133	DIODE	T42-0657-08	SLIDE MOTOR WITH GEAR
△ D11 , 12				ISS133	DIODE	SH1106300200	MOTOR WITH PULLEY
△ D13 -18				RL1047	DIODE	T25-0032-08	PICKUP
D501-509				ISS133	DIODE		
F1501				10-BT-676K	INDICATOR TUBE		
IC1			*	LA9211M	IC(CRF AMP/SERVO)		
IC2			*	LC78681E	IC(D.S.P.)		
IC3			*	TC9268P	IC(DA CONVERTOR)		
IC4			*	UPD75216CW-A65	IC(MICROPROCESSOR)		
IC5			*	PST6600	IC(RESET)		
IC6			*	LA6524	IC(DRIVER)		
IC7			*	TA7221S	IC(BRIDGE DRIVER)		
IC8			*	AN79105T	IC(VOLTAGE REGULATOR +5V)		
△ IC9			*	AN78105T	IC(VOLTAGE REGULATOR -5V)		
△ IC10			*	NJM4660	IC(VOLTAGE REGULATOR +5V)		
IC11			*	DIC114YS	IC(OP AMP X2)		
Q1 -4			*	2SA1015GR	DIGITAL TRANSISTOR		
Q5			*	2SC1740SR	TRANSISTOR		
Q7			*	2SA933SR	TRANSISTOR		
Q8			*	2SD2012	TRANSISTOR		
△ Q9			*	2SB1375	TRANSISTOR		
△ Q10			*	MT29.1A	ZENER DIODE		
Q11			*	MT29.1A	ZENER DIODE		
Z12			*	MT29.1A	ZENER DIODE		
ZD5			*	MT29.1A	ZENER DIODE		
ZD6			*	MT29.1A	ZENER DIODE		
				MT29.1A	MECHANISM ASSY		
2	1B		*	SH1313730001	MAGNET		
5	1B		*	T50-1067-08	BRACKET MAGNET		
6	1B		*	D16-0362-08	BELT DRIVE		
7	1B		*	SH1102810098	GEAR PINION		
9	1A		*	SH1102480607	SHIFT LEVER		
10	1B		*	A11-1021-08	CHASSIS LOADING		
11	2B		*	SH1302810228	GEAR(MIDDLE)		
12	2B		*	SH1302810229	GEAR(DRIVE)		
15	3B		*	SH1303260448	CUSHION		
16	2B		*	SH1305301248	PUSH SWITCH(SLT)		
19	3A		*	SH1302810229	GEAR(RACK MOVE)		
20	3A		*	SH1252580244	SPRING(RACK)		

L:Scandinavia
K:USA
Y:Px(Far East, Hawaii)
Y:AAFES(Europe)P:Canada
E:Europe
X:Australia
M:Other Areas

△ indicates safety critical components.

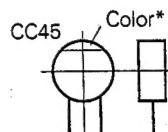
△ indicates safety critical components.

PARTS LIST

CAPACITORS

CC	45	TH	1H	220	J
1	2	3	4	5	6

1 = Type ... ceramic, electrolytic, etc. 4 = Voltage rating
 2 = Shape ... round, square, ect. 5 = Value
 3 = Temp. coefficient 6 = Tolerance



• Capacitor value

010 = 1pF
 100 = 10pF
 101 = 100pF
 102 = 1000pF = 0.001μF
 103 = 0.01μF

2 2 0 = 22pF
 Multiplier
 2nd number
 1st number

• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10μF - 10 ~ +50
							-20	-20	-0	Less than 4.7μF - 10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

2nd word	A	B	C	D	E	F	G	H	J	K	V
1st word											
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J

(Chip) (CH, RH, UJ, SL)

Refer to the table above.

1 = Type
 2 = Shape
 3 = Dimension
 4 = Temp. coefficient
 5 = Voltage rating
 6 = Value
 7 = Tolerance

Dimension (Chip capacitors)

Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

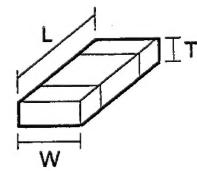
RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J

(Chip) (B, F)

Dimension



• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J

1 = Type
 2 = Shape
 3 = Dimension
 4 = Temp. coefficient

5 = Rating wattage
 6 = Value
 7 = Tolerance

Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6 ± 0.2	0.8 ± 0.2	0.5 ± 0.1

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

DP-470

SPECIFICATIONS

Format

System Compact disc digital audio system
Laser Semiconductor laser
Number of channels 2 channels
Playing rotation 200rpm~500rpm (CLV)

D/A convertors

D/A conversion 1Bit
Oversampling 8fs (352.8kHz)

Audio

Frequency response 8Hz~20kHz, ± 1.0 dB
Signal to noise ratio More than 94dB

Dynamic range More than 92dB
Total harmonic distortion Less than 0.005%
Channel separation More than 83dB
Wow & flutter Unmeasurable limit
Output level/impedance

Fixed 1.2V/3.3k Ω

General

Dimensions W : 360mm
H : 94mm
D : 307mm
Weight (Net) 3.4kg

Note : KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

KENWOOD CORPORATION

Aliva Mitake, 2-5, 1-chome Shibuya, Shibuya-ku, Tokyo 150, Japan

KENWOOD SERVICE CORPORATION

P.O. BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745, U.S.A.

KENWOOD ELECTRONICS CANADA INC.

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

KENWOOD ELECTRONICS LATIN AMERICA S.A.

P.O. BOX 55-2791, Piso 6 Plaza Chase, Cl. 47 y Aquilino de la Guardia, Panama, Republica de Panama

TRIO-KENWOOD U.K. LIMITED

KENWOOD House, Dwight Road, Watford, Herts., WD1 8EB United Kingdom

KENWOOD ELECTRONICS BENELUX N.V.

Mechelsesteenweg 418 B-1930 Zaventem, Belgium

KENWOOD ELECTRONICS DEUTSCHLAND GMBH

Rembrucker Str. 15, 63150 Heusenstamm, Germany

TRIO-KENWOOD FRANCE S.A.

13 Boulevard Ney, 75018 Paris, France

KENWOOD ELECTRONICS ITALIA S.p.A.

Via G. Sirtori, 7/9 20129 Milano, Italy

KENWOOD ESPAÑA S.A.

Bolivia, 239-08020 Barcelona, Spain

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (A.C.N. 001 499 074)

P.O. BOX 504, 8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia

KENWOOD & LEE ELECTRONICS, LTD.

Unit 3712-3724, Level 37 Tower 1, Metropiazza, 223 Hing Fong Road, Kwai Fong N.T. Hong Kong

KENWOOD ELECTRONICS SINGAPORE PTE LTD.

No. 1 Genting Lane #07-00, KENWOOD Building, Singapore, 1334